Proposed Experimental Releases from
Glen Canyon Dam and
Removal of Non-Native Fish
Environmental Assessment
September 2002

**ERRATA SHEET**

This errata sheet lists the following changes:

| Chapter Page (pg) | For | Revise |
|---|---|---|
| P. 26<br>First bullet<br>Line 4 | Life should not be wasted and find grinding very distasteful. | The ~~life~~ trout should not be wasted and the tribes find the option of grinding the trout carcasses very distasteful. |
| P. 86<br>First para.<br>Line 3 | The Proposed Action includes experimental high flows of the same magnitude would allow more effective planning and execution of future beach/habitat-building flows. | The Proposed Action includes experimental high flows of the same magnitude that would allow more effective planning and execution of future beach/habitat-building flows. |
| P. 91 | Southwest Rivers was omitted from list of Interested Organizations | Southwest Rivers was added to list. |
| PP. 89-91 | | These were revised because some organizations no longer existed and/or had no forwarding addresses. |

releases would produce the desired effect. The downramp rate of the Proposed Action was also selected to provide empirical validation of the model used in the FEIS to estimate effects of downramp rates on beach stability.

Steady 8,000 cfs releases were considered for the autumn sediment input scenario but were rejected in favor of alternating 6,500–9,000 cfs and steady 8,000 cfs releases. Sediment researchers identified that the experiment could determine whether there are significant differences in the ability of these flows to conserve fine sediments. Therefore, the choice was made to develop the experiment so that this comparison could be made.

Grinding the carcasses of trout was considered for the disposal of fish mechanically removed from the Colorado River but was rejected for the following reasons:

- The Hopi, Hualapai, and Paiute tribes have expressed concern over the wasting of life, including the taking of non-native trout. While they have concern over the status of the endangered humpback chub, they respect trout as a living component of the ecosystem. They view all life as important. The trout should not be wasted and the tribes find the option of grinding the trout carcasses very distasteful. The Proposed Action now proposes removal of the non-native fish from the Grand Canyon. A beneficial use for the fish thus removed would be sought.

- Some have raised water quality concerns about discharging ground trout into the mainstream Colorado River. While it is unlikely that such discharge would have significant ecological impacts (biological oxygen demand, nutrient loading, or non-native fish food source), the threat of such impacts was removed by the proposal to transport the fish out of the canyon.

NPS for Glen Canyon National Recreation Area, Grand Canyon National Park, and Lake Mead Recreation Area. In some cases, such as for exotic species control and endangered species protection, management objectives are very similar between the GCDAMP and the NPS. Shared objectives and cooperation among the Federal agencies, state agencies, tribes, and stakeholder groups should result in more effective and efficient management of these resources. The brown trout removal project being undertaken by Grand Canyon National Park is illustrative of shared objectives between the park and other members of the GCDAMP.

There is a slight reduction in frequency of beach/habitat-building flows for the duration of the Interim Surplus Criteria ROD that has a minor impact on the frequency of those flows. The Proposed Action includes experimental high flows of the same magnitude that would allow more effective planning and execution of future beach/habitat-building flows.

### *Power*

Water year 2002 has been one of the driest on record and, as it closes, Lake Powell is more than 70 ft below maximum pool. Compared to the No Action Alternative, 93,000 af would be released through jet tubes and bypass the powerplant. This amount of water could generate approximately 41,000 MWh of electricity if not bypassed or about 1.1% of the total Glen Canyon Dam output. Total cost of the Proposed Action Alternative in lost generation or replaced power if the autumn sediment input scenario and habitat maintenance flow scenario occur in the next 2 years is estimated at $1.7 million. This is approximately 0.6% of the estimated $280 million hydropower revenue that will be generated during 2003-2004.

### *Air Quality*

The proposed action would result in more emissions than No Action; however, compared to the typical monthly variation in emissions resulting from differential levels of hydropower generation, the difference would be negligible. The 1.1% less hydropower produced under the Proposed Action Alternative would result in a net increase of $SO_2$ and $NO_x$ emissions from interconnected powerplants in the region. When compared to the annual variation in emissions due to water availability, however, this increase is not likely to be significant.

## 3.16 UNAVOIDABLE ADVERSE IMPACTS

Some unavoidable adverse impacts occur to HBC, bald eagle, trout, KAS, and northern leopard frogs. These impacts are described earlier in this chapter. Also, bypassing the powerplant with approximately 15,000 cfs of water for two and a half days would cause an unavoidable loss of power generation of approximately 1.1% of annual hydropower production.

## 4.4 DISTRIBUTION LIST

### 4.4.1 Federal Agencies

Department of the Army
- Corps of Engineers, Bountiful, Utah; and Phoenix, Arizona

Department of Energy
- Western Area Power Administration, Loveland and Lakewood, Colorado; Phoenix, Arizona; and Salt Lake City, Utah

Department of the Interior
- Bureau of Indian Affairs; Western Regional Office, Phoenix, Arizona; Hopi Agency, Keams Canyon, Arizona; Truxon Canon Agency, Valentine, Arizona; Navajo Area Office, Gallup, New Mexico; Southern Paiute Field Station, St. George, Utah
- U.S. Fish and Wildlife Service, Phoenix, Arizona; Flagstaff, Arizona; Pinetop, Arizona
- U.S. Geological Survey, Tucson and Flagstaff, Arizona; Boulder, Colorado; Menlo Park, California
- National Park Service, Washington, DC; Fort Collins, Colorado; Flagstaff, Arizona; Grand Canyon National Park, Grand Canyon, Arizona; Lake Mead National Recreation Area, Boulder City, Nevada; Glen Canyon National Recreation Area, Salt Lake City, Utah
- Office of Environmental Policy and Compliance, Washington, DC
- Office of the Field Solicitor, Phoenix, Arizona

Department of Justice, Denver, Colorado

Environmental Protection Agency, Region VIII, Denver, Colorado; Region IX, San Francisco, California

U.S. General Accounting Office, Washington, DC; Denver, Colorado

U.S. Senators, AZ, CA, CO, NM, UT, WY, NV

### 4.4.2 State and Local Agencies

Arizona State Government, Phoenix
- Governor
- Commerce Department
- Environmental Quality, Department of
- Game and Fish Department
- State Historic Preservation Officer
- Water Resources, Department of

California State Government, Sacramento
- Governor
- Colorado River Board of California, Glendale; California Water Dept., Sacramento, California

Colorado State Government, Denver
- Governor
- Colorado Water Conservation Board

Nevada State Government, Carson City,
Governor
Colorado River Commission of Nevada
New Mexico State Government, Santa Fe
Governor
State Engineer's Office
Interstate Stream Commission
Utah State Government, Salt Lake City
Governor
Water Resources, Division of
Wyoming State Government, Cheyenne
Governor
State Engineer

### 4.4.3 Indian Tribes

Havasupai Tribe, Supai, Arizona
Hopi Tribe, Kykotsmovi, Arizona
Hualapai Tribe, Peach Springs, Arizona
Navajo Nation, Window Rock, Arizona
Paiute Tribe of Utah, Cedar City, Utah
San Juan Southern Paiute Tribe, Tuba City, Arizona
Kaibab Band of Paiute Indians, Fredonia, Arizona
Zuni Pueblo, Zuni, New Mexico

### 4.4.4 Schools

Arizona State University, Tempe, Arizona
Northern Arizona University, Flagstaff, Arizona
University of Utah, Salt Lake City, Utah
Utah State University, Logan, Utah
Colorado State University, Fort Collins, Colorado

### 4.4.5 Interested Organizations and Individuals

American Fisheries Society, Bethesda, Maryland; McCall, Idaho; Albuquerque, New Mexico
American Rivers, Washington, DC
Argonne National Laboratory, Lakewood, Colorado; Argonne, Illinois
Arizona Municipal Power Users Association, Phoenix, Arizona
Arizona Nature Conservancy, Tucson, Arizona
Arizona River Runners, Phoenix, Arizona
Arizona Wildlife Federation, Mesa, Arizona
Audubon Society, Coordinating Counsel of Utah, Clearfield, Utah; Maricopa, Phoenix, Arizona; Flagstaff and Sedona, Arizona; Prescott, Arizona; Yosemite Area Chapter, Mariposa, California
Bio/West, Inc., Logan, Utah
Bountiful City Light and Power Department, Bountiful, Utah
Canyoneers, Inc., Flagstaff, Arizona

Colorado River Energy Distributors Association, Tempe, Arizona
Dixie Escalante Rural Electric Association, St. George and Beryl, Utah
Desert Flycasters, Chandler, Arizona
Eco-Plan Associates, Mesa, Arizona
Ecosystem Management International, Inc., Durango, Colorado
Environmental Defense Fund, Inc., New York, New York; Oakland, California; Boulder, Colorado; Austin, Texas
Federation of Fly Fishers, Flagstaff, Arizona
Friends of the Colorado River, Flagstaff, Arizona
Grand Canyon River Guides Association, Flagstaff, Arizona
Grand Canyon Trust, Flagstaff, Arizona
Living Rivers, Moab, Utah
Lynx Creek Unlimited, Prescott, Arizona
Maricopa Water District, Peoria, Arizona
Murray City Power, Murray, Utah
Natural Resources Defense Council, Inc., New York, New York
Santa Barbara Flyfishers, Santa Barbara, California
Sierra Club, Southwest Office, Phoenix, Arizona
Southwest Rivers, Flagstaff, Arizona
Tri-State Generation and Transmission Association, Inc., Denver, Colorado
Trout Unlimited, Rocky Mountain Region, Wheat Ridge, Colorado; West Coast Region, Fairfax, California; and Mesa, Arizona
Upper Colorado River Commission, Salt Lake City, Utah
The Wilderness Society, Washington DC
Utah Associated Municipal Power Systems, Salt Lake City, Utah

Listing of individuals available upon request